Working with DOE's National Labs

The Federal Energy Management Program (FEMP) facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship.

The Federal Energy Management Program (FEMP) facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship. To advance that goal and help accelerate agencies' progress, FEMP is working to foster collaboration between its Federal agency customers and the U.S. Department of Energy (DOE) national laboratories.[1]

The purpose of this guide is to inform agencies of the capabilities and expertise that exist at the labs and to answer questions about how to work with the labs. Any assistance provided by the labs will be in accordance with the requirements of Federal Acquisition Regulation (FAR) Subpart 35.017 and the labs' designation as "Federal Funded Research and Development Center" (FFRDC) facilities.

This move expands upon and rationalizes the array of positive relationships that exist between agencies in response to the challenges and opportunities posed by the American Recovery and Reinvestment Act of 2009 (ARRA) and by the mandates of the Energy Independence and Security Act of 2007 related to Federal facilities and fleets.

FEMP plans to expand our support to agencies. Funds will be directed to labs to assist agencies in making their internal management decisions for investments in energy efficiency and deployment of renewables. FEMP will expand its contractor support for helping agencies with planning, analysis, and training on a range of subjects. FEMP will provide major DOE labs with funding that will allow them to respond quickly to provide technical advice and assistance. A simple vetting and approval system will allow us to quickly allocate work to each of the labs in accordance with FEMP-provided funding.

The key capabilities of each of the laboratories are listed in the last section of this guide.

FEMP's funds will probably not be sufficient to cover the full scope of agency demand. Our intention is to help provide immediate, time-sensitive assistance from the DOE labs and contractors with the understanding that after those funds are exhausted, agencies will need to pay for further support under a "work for others" (WFO) arrangement. Agencies and labs are of course free to establish WFO agreements directly on their own.

[1] The DOE laboratories are designated as "National Laboratories" as indicated in 42 U.S.C. 15801 (Energy Policy Act of 2005), Section 2 Definitions; as "Federal Funded Research and Development Center" (FFRDC) facilities established in accordance with the Federal Acquisition Regulation Subpart 35.017; and as "Federal Laboratories" as indicated in 15 U.S.C. 3170a (d) (2).

Assistance From FEMP

How FEMP Provides Technical Assistance Through the National Labs

DOE's national laboratories conduct research and development (R&D) essential to DOE's mission and provide technical assistance to many DOE programs, including FEMP. DOE authorizes funding to the labs through the Field Work Proposal. With DOE approval, the labs can use these funds to support other agencies, as in the case of the technical assistance FEMP provides through the labs.

Services Provided by the National Labs Through FEMP

The national labs are uniquely qualified to provide objective and unbiased assistance to Federal agencies. The labs will provide services such as those described below with FEMP's funding:

- Initial screenings or assessments of facility needs and/or feasibility of particular technologie
- Project prioritization
- Strategic energy planning and benchmarking
- Technical reviews of designs and proposals
- Energy audit training
- High-performance green building technical support
- Federal vehicle fleet technical support
- Operations and maintenance
- Secondment (detail) of key lab staff to work within agencies for a limited duration (normally not more than 24 months)
- All of the above with special emphasis on particular technologies in the areas of the labs' expertise (see the list of labs' capabilities)

How to Request Assistance

To obtain DOE laboratory help for your energy efficiency and renewable energy projects, please send an email to: FEMP_ARRA_Support@ee.doe.gov. Please copy the email to the FEMP Customer Service Representative for your agency.

U.S. DEPARTMENT OF ENERGY
Energy Efficiency & Renewable Energy

(Contact information for FEMP Customer Service Reps is in the table to the right and also at http://www1.eere.energy.gov/femp/about/contacts.html.)

This is the information we will need to process your request:

- Your contact information
- Project description, duration, cost and scope
- Anticipated impact in terms of energy saved
- Type of assistance requested
- Required start and stop dates for assistance
- Special considerations
- Whether you have a preference to work with any specific laboratory
- Ranking of priority among other submissions from your agency
- Indication of willingness to assume costs at some future point

FEMP will quickly review your request and make a decision as to whether it can receive FEMP support. If so, we will initiate a dialogue with you and an appropriate laboratory or laboratories to develop time and cost parameters. The laboratory will use funds from FEMP to kick-start your project while you establish a WFO agreement for continuing work if required.

The criteria that FEMP will use to select agency projects to receive FEMP assistance are:

- Compatibility with lab and/or contractor skills and expertise and ability of such expertise to add value to the agency's efforts
- Availability of resources to meet agency needs
- Value of anticipated project outcomes
- Balancing allotments to agencies, commensurate with energy investments

Please note that DOE laboratories offer technical assistance to other Federal agencies only in accordance with the governing FAR clauses and U.S. Codes cited above.

Work for Others

Federal agencies should use these WFO agreements for engaging support from the national labs for any long-term effort beyond FEMP-funded initial support.

The objectives of WFO are to provide assistance and aggregate resources to accomplish goals of national concern that may otherwise be unattainable and to provide access to highly specialized or unique facilities, services, or technical expertise.

Authorization for WFO

DOE's Work-for-Others program furnishes reimbursable support to other Federal agencies as part of the services rendered to and for U.S. Government activities under various laws and regulations, principally the Economy Act and the Atomic Energy Act of 1954. The Economy Act (31 USC 1535) authorizes an agency to place orders with any other agency for supplies or services if it is determined by the requesting agency that it is in the Government's interest to do so (FAR Section 17.502 General). WFO agreements allow DOE to provide research and technical assistance to Federal agencies, commercial companies, local and state governments, and foreign governments. WFO is fully funded by the non-DOE entity. FEMP will assist agencies in setting up such agreements as needed, with the aim of having any agreements in place prior to exhaustion of available FEMP funds.

Parameters of WFO:

- WFO may be either R&D or non-R&D services to the requesting organization.
- Work must be consistent with the mission and/or special expertise of the DOE laboratory or technology center.
- Work must not affect the achievement of DOE work requirements.
- Work must not directly compete with the domestic U.S. private sector.

Web links for More Details:

- The DOE Order governing laboratory work for others, DOE 481.1C, is at http://www.directives.doe.gov/ (enter "481.1C" in the search field and then select DOE 481.1C from the list of choices).
- The DOE pamphlet, "How Federal Agencies Obtain Technical Resources and Skills from the U.S. Department of Energy" is at http://www.ornl.gov/adm/wfo/exthome.htm.

FEMP Customer Service Representatives

Agency/Sub Agency	FEMP Customer Rep	Phone (202)	E-mail address
Air Force	Chris Tremper	586-7632	chris.tremper@ee.doe.gov
Army	Anne Crawley	586-1505	anne.crawley@ee.doe.gov
DHS	Ab Ream	586-7230	ab.ream@ee.doe.gov
DOC	Joe Konrade	586-8039	joseph.konrade@ee.doe.gov
DoD	Richard Kidd	586-2982	Richard.kidd@ee.doe.gov
DOE	Cyrus Nasseri	586-9138	cyrus.nasseri@ee.doe.gov
DOI	Joe Konrade	586-8039	joseph.konrade@ee.doe.gov
DOJ	Hayes Jones	586-8873	hayes.jones@ee.doe.gov
DOL	Will Lintner	586-3120	william.lintner@ee.doe.gov
DOT	Amanda Sahl	586-1662	amanda.sahl@ee.doe.gov
EPA	Matt Gray	586-0067	matthew.gray@ee.doe.gov
GSA	Skye Schell	586-9015	Schuyler.schell@ee.doe.gov
HHS	David McAndrew	586-7722	david.mcandrew@ee.doe.gov
HUD	Steve Walder	586-9209	stephen.walder@ee.doe.gov
Marines	Bill Raup	586-2214	william.raup@ee.doe.gov
NARA	Rebecca Dyer	586-8215	rebecca.dyer@ee.doe.gov
NASA	David Boomsma	586-7086	david.boomsma@ee.doe.gov
Navy	Will Lintner	586-3120	william.lintner@ee.doe.gov
RRB	Chris Tremper	586-7632	chris.tremper@ee.doe.gov
SSA	Annie Haskins	586-4536	annie.haskins@ee.doe.gov
State	Mark Reichhardt	586-4788	mark.reichhardt@ee.doe.gov
TRSY	Hayes Jones	586-8873	hayes.jones@ee.doe.gov
TVA	Shawn Herrera	586-1511	shawn.herrera@ee.doe.gov
USDA	Mark Reichhardt	586-4788	mark.reichhardt@ee.doe.gov
BBG	Chris Tremper	586-7632	chris.tremper@ee.doe.gov
USPS	Brad Gustafson	586-5865	Brad.gustafson@ee.doe.gov
VA	Scott Richlen	586-2078	Scott.richlen@ee.doe.gov

Laboratory Contacts and Capabilities

The DOE laboratories have diverse backgrounds. They were created to support the DOE's missions, and different capabilities emerged at each as they focused on energy, national security, science, and related environmental activities. Each Government-owned, contractor-operated laboratory is managed through an independent contract between the lead DOE Headquarters organization, its local DOE Field or Operations Office, and the respective laboratory's managing organization. DOE organizations include Energy Efficiency and Renewable Energy, Science, Defense Programs, Nuclear Energy, and Environmental Management.

Below is a listing of key capabilities and points of contact for each laboratory. The laboratory representative that you choose to work with will help you each step of the way through the WFO process.

Argonne National Laboratory

9700 S. Cass Ave., Argonne, IL 60439
www.anl.gov

Contacts

Guenter Conzelman (primary), Director, Center for Energy, Environmental, and Economic Systems Analysis, 630-252-7173, guenter@anl.gov

Dane Skow (secondary), Sr. Scientist, 630-252-8724, skow@anl.gov

Core Competencies

- Strategic energy planning and analysis
  - Comprehensive energy supply and demand analysis and projections (site, city, state, region, nation)
  - Company/agency-wide energy investment analysis
  - Economic/financial project evaluation
  - Investment and risk analysis
- Electric power systems analysis
  - Detailed operational and dispatch analysis
  - Reliability of supply
  - Electricity demand analysis and projections
  - Power system investment and expansion analysis
  - Electricity price forecasting (hourly, by location, price distributions)
- Energy security and supply disruption analysis for oil, natural gas, and electricity for specific sites/locations, regions, states
- Logistical planning, supply chain analysis, process analysis
- Transportation analysis
  - Alternative fuel vehicles
  - Electric and plug-in hybrid vehicle testing
  - Well-to-wheel of vehicles and fuel systems
  - Batteries, fuel cells, and engine research
- Environmental assessments and policy analysis
- Energy design and site planning and analysis
  - Optimization of building performance
  - Distributed heating and cooling systems
- Design, procurement, construction, and operation of LEED-certified facilities and high-performance sustainable buildings
- Development, implementation, and technical support of energy savings performance contract (ESPC) projects
- Materials simulation and modeling
- Materials design and development
- Advanced, high-efficiency ice-slurry cooling systems
- Distributed control systems
- Photovoltaic systems
- Energy storage and distribution

Idaho National Laboratory

P.O. Box 1625, Idaho Falls, ID 83415
www.inl.gov

Contacts

Chris Ischay, INL Sustainability Program, 208-526-4382, Christopher.Ischay@inl.gov

Ernest Fossum, INL Sustainability Program, 208-526-2513, Ernest.Fossum@inl.gov

Core Competencies

- Wind and geothermal power research and application
- Alternative fuel vehicle testing with particular expertise on battery power
- Natural gas liquefaction with an emphasis on vehicle fueling
- Vehicle fleet transformation and migration to General Services Administration ownership
- Implementation of fleet Management and Information Systems (MIS) — INL Developed and maintains the Federal Automotive Statistical Tool (FAST)
  - Development of ESPC and Utility Energy Services Contract (UESC) projects including analyses for practicality and measurement and verification activities
- LEED-Accredited Professionals

Lawrence Berkeley National Laboratory

One Cyclotron Road, Berkeley, CA 94720
www.lbl.gov

Contacts

Charles Williams, Supervisor Applications Team, 510-495-2892, CHWilliams@lbl.gov

Marcy Beck, Program Development Office Lead, 510-486-6156, MWBeck@lbl.gov

Core Competencies

- Energy management project development, implementation, and financing; measurement and verification of savings
- Utility incentives/public benefits programs, state and utility programs information and implementation assistance
- Renewables procurement, Power Purchase Agreements
- Demand response program participation and technology assistance
- Advanced/emerging product procurement, FEMP Emerging Technology Matrix, procuring energy efficient equipment
- New construction design assistance, smart buildings (system optimization and integration), sustainable design and operations
- Lighting: controls; task/ambient; advanced light sources
- High-technology buildings: efficient design and operations of laboratories, data centers, clean rooms, hospitals
- Energy efficient appliances; standby power/power supply waste
- Cool roofs/cool communities (high-albedo roofing/surfaces)
- Building energy benchmarking for standard and high-technology buildings
- Energy information systems; diagnostics (model-based commissioning, fault detection), dashboards (actionable user interface for energy and sustainability information)
- High-performance buildings
- Residential windows, envelope, insulation, appliances
- Commercial windows and daylighting; electrochromic windows
- Thermal distribution systems and duct sealing (commercial and residential)

National Energy Technology Laboratory

www.netl.gov

Contact

Craig Hustwit, Biomass and Alternative Methane Fuels, Field Manager, 412-386-4532, craig.hustwit@netl.doe.gov

Core Competencies

- Identification and assessment of biomass and alternative methane fuels resources, i.e. landfill gas, wastewater treatment plant digester gas, coalbed methane
- Expertise in combustion and gasification technologies use to convert those resources to electricity, heat, and liquid fuels
- Development of private-sector partnerships to design and construct energy plants using these resources, especially on Federally owned properties
- Development of acquisition agreements with local governments and Federal, state, and private-sector resource owners
- Coordination with local utility companies and regional transmission organizations where needed

National Renewable Energy Laboratory

1617 Cole Boulevard, Golden CO 80401
www.nrel.gov

Contact

Bob Westby, Laboratory Program Manager, Federal Energy Management Program, 303-384-7534, robert.westby@nrel.gov

Core Competencies

- Energy strategic planning/road mapping (agency-wide to site-specific)
- Building energy strategies and applications (energy efficiency and built environment renewable energy (RE) assessment/prioritization/screening, technical assistance, audit training)
- Facilitation of alternative financing [ESPCs, UESCs, RE, Power-Purchase Agreements (PPAs)]
- RE project assistance (all technologies, distributed/utility scale, agency-wide and site project screening/prioritization, technical assistance)
- Net-zero/integrated energy/sustainability strategies and assistance (campuses, military bases, whole buildings, energy security solutions)
- Transportation solutions (agency/site strategic planning assessments, plug-in hybrid electric vehicles/electric vehicles, alternative fuel vehicles/fuels, fuel efficiency strategies)

Oak Ridge National Laboratory

P.O. Box 2008, Oak Ridge TN 37831-6067
www.ornl.gov

Contacts

Julia Kelley, Federal Energy Program Manager, 865-574-1013, kelleyjs@ornl.gov
John Shonder, 865-574-2015, shonderja@ornl.gov

Core Competencies

- Facilities
  - Optimizing the energy performance of buildings
  - Building energy systems including HVAC and water heating
  - Facility energy resource assessments
  - Technology performance evaluations
  - Market transformation of technologies
  - Sensors and controls
  - Technical support for ESPC and UESC projects including quality assurance and energy benchmarking
  - Geothermal heat pumps
  - Combined cooling, heat, and power and other distributed energy systems
  - Building envelopes
  - Moisture control in buildings
  - Solar systems integration
  - Energy efficiency in industrial processes, steam systems, pumping systems, motor-driven equipment, and compressed
  - Hybrid vehicle technology and electric traction drive systems
- Electricity infrastructure operations
  - Grid system dynamics
  - Energy system optimization
  - Demand-response building energy systems
  - Grid integration of renewable energy
  - Grid visualization and control
- Fleets/transportation operations/mobility management
  - Fuels (including biofuels and other alternative fuels)
  - Engines
  - Emissions (regulated and unregulated)
  - Systematic approach for efficient transportation operations including eco-driving
  - Non-engine vehicular technologies (e.g., new generation wide based single tires)
  - Logistics and supply chain management
  - Mission critical fleet composition (vehicle types and sizes)
  - Locational analysis
  - Data-driven investment decision making
  - Smart routing
  - Mobility demand management
  - Field operational tests

Pacific Northwest National Laboratory

P.O. Box 999, Richland, WA 99352
www.pnl.gov

Contacts

Bill Sandusky, Program Manager, Federal Energy Management Program, 509-375-3709, bill.sandusky@pnl.gov

Marylynn Placet, Buildings Energy Efficiency Account Manager, 202-646-5249, m.placet@pnl.gov

Core Competencies

- Building energy codes
- Appliance/equipment standards
- Carbon management; greenhouse gas analysis/modeling
- Building energy simulation modeling
- Building diagnostics and controls
- Building/installation operation and maintenance strategies
- Building/installation resource assessments (energy, water, renewable technologies)
- Technology performance evaluations and demonstrations
- High-performance, sustainable design for buildings and installations
- Solid state lighting and energy-efficient lighting solutions
- Innovative technology procurement strategies
- Real-time collection/processing/analysis of end-use data
- Training material development and presentation
- Electricity infrastructure operations
  - Grid system dynamics
  - Energy system optimization
  - Grid integration of renewable energy
  - Grid visualization and control
- Plug-in hybrid vehicle analysis

Sandia National Laboratory

P.O. Box 5800, Albuquerque, NM 87185
www.sandia.gov

Contacts

Rush Robinett, Manager Energy and Infrastructure Futures, 505-845-9015, rdrobin@sandia.gov

Juan Torres, Manager Energy Systems Analysis Department, 505-844-0809, jjtorre@sandia.gov

Core Competencies

- Material and engineering sciences including combustion, catalysis, material processing, and separations research and development for energy applications
- Energy infrastructure, both electric power and energy pipeline and refineries, security and reliability risk assessments of both physical and cyber threats and challenges
- Energy infrastructure interdependencies modeling and analysis at regional and national scales for both local and national events or disruptions
- Renewable, fossil, and nuclear energy electric power generation technology research and development
- Energy storage research, development, and testing that ranges from small-mobile to grid-scale applications
- Evaluation, testing, and installation of renewable and other distributed energy technology integration and control for both small and large scale grid-tied and islanded applications
- Research and development of non-traditional future transportation fuels including sources from algal and CO_2 feedstocks
- Facility and infrastructure systems and controls optimization to support energy and water efficiency, including modeling, auditing, and retro-commissioning
- Implementation of sustainable design, including LEED for new construction and existing buildings

U.S. DEPARTMENT OF ENERGY
Energy Efficiency & Renewable Energy

For more information contact:
EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.femp.energy.gov

DOE-00XX
March 2009